

REMARKS

This Application has been carefully reviewed in light of the Office Action mailed December 6, 2006 (the "Office Action"). At the time of the Office Action, Claims 1-46 were pending and stand rejected.

Objection to Drawings

The Office Action objects to the drawings as failing to comply with 37 C.F.R. § 1.84(p)(5). Applicants enclose one (1) replacement sheet of formal drawings correcting the objection.

Section 102 Rejections

The Office Action rejects Claims 35 and 41 under 35 U.S.C. 102(e) as being anticipated by U.S. Publication No. 2004/0052530 to Tian ("*Tian*"). Applicants respectfully traverse these rejections.

Claim 35 recites a plurality of hub nodes operable to selectively pass or terminate a plurality of individual sub-bands of optical traffic, a plurality of sub-band nodes each operable to terminate a respective sub-band of the optical traffic and wherein the plurality of hub nodes form a plurality of photonic domains each operable to communicate different traffic streams in the same sub-bands without interference. Claim 41 recites similar elements. The Office Action suggests that *Tian* discloses each of these elements. *See* Office Action, page 3. Specifically, the Office Action suggests that transport elements 30 and 32 of *Tian* disclose the claimed hub nodes. However, *Tian* merely states that transport elements 30 and 32 "add and drop traffic to and from the ring 26, remove previously transmitted traffic, and/or provide other interaction of the node 12 with the ring." *Tian*, paragraph [0031]. There is no disclosure of a hub node operable to selectively pass or terminate a plurality of individual sub-bands of optical traffic, and the mere disclosure of adding and dropping traffic does not disclose these elements. In addition, the Office Action suggests that *Tian*'s disclosure of working path and protection path discloses the claimed photonic domains. However, *Tian* states that:

Working traffic is added at node 22 in sub-band A in only the clockwise direction and travels the circumference of fiber 14 to be rejected from fiber 14 at node 22, as described above in reference to FIG. 4. However, the node configuration of FIG. 8 also allows for path sharing by allowing

additional traffic in sub-band A to be added to fiber 16 at node 20. Such additional traffic may be referenced to as protection channel access (PCA) traffic. Both working and PCA sub-band A traffic is rejected at node 22 for both fibers 14 and 16, thus avoiding channel interference.

Tian, paragraph [0058]. Thus, *Tian* discloses working and protection paths on different fibers or rings. This teaching does not disclose the plurality of hub nodes on the same ring forming a plurality of photonic domains each operable to communicate different traffic streams in the same sub-bands without interference. Therefore, for at least these reasons, Applicants respectfully submit that Claims 35 and 41 are patentable over the cited art used in the rejections and request that the rejections of these claims be withdrawn.

Section 103 Rejections

The Office Action rejects Claims 1-34 under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. 2003/0128985 to Elbers ("*Elbers*") in view of U.S. Patent No. 6,426,815 to Koehler ("*Koehler*"). Applicants respectfully traverse these rejections.

Claims 1-7, 16-22 and 23-28

Claim 1 recites an optical ring with a plurality of nodes coupled to the optical ring and each operable to passively add and drop one or more traffic streams to and from the optical ring, the plurality of nodes comprising a hub node operable to selectively pass or terminate a plurality of individual sub-bands of the optical traffic and a plurality of sub-band nodes each operable to terminate a respective sub-band of the optical traffic. Claims 16 and 23 recite similar elements. The Office Action suggests that *Elbers* discloses each of these elements except "an optical ring operable to communicate optical traffic comprising plurality of nodes with different functionality." Office Action, page 4. Specifically, the Office Action states that *Elbers* discloses:

[A] hub node operable to selectively pass or terminate (by filtering and/or switching) a plurality of individual sub-bands of the optical traffic (fig. 2, page 4, para 0043 lines 1-5, para 0045 lines 102);
and a plurality of sub-band nodes (add-drop stages with local functionality) each operable to terminate (by filtering) a respective sub-band of the optical traffic (page 4 para 0040 lines 11-13, para 0045 lines 3-9).

Office Action, page 4. However, as an initial matter, Applicants note that *Elbers* merely discloses a single node – a "modular optical network node" – and not an optical ring with a plurality of nodes. See *Elbers*, Abstract. The Office Action suggests that different

components of the *Elbers* node constitute the claimed hub-band node and plurality of sub-band nodes. Applicants respectfully disagree. First, *Elbers* does not disclose a plurality of nodes operable to passively add and drop one or more traffic streams to and from the optical ring. The components identified in the Office Action do not each passively add and drop one or more traffic streams to and from the optical ring. Instead, they are all part of the same optical node coupled to a network. Second, the components of the *Elbers* node identified as the claimed "plurality of sub-band nodes" (add/drop stages ADS_n, ADS_m) are not operable to terminate a respective sub-band of the optical traffic. All that is disclosed with respect to these component is that they are add/drop stages providing local add/drop functionality and that they may include "a combination of optical filters, preferably narrowband optical filters, couplers or circulators." See *Elbers*, par. [0040] and [0045]. The mere general disclosure that the *Elbers* add/drop stages may include optical filters does not provide the necessary disclosure of a plurality of sub-band nodes each operable to terminate a respective sub-band of the optical traffic.

In addition, the Office Action states that *Koehler* "teaches a ring transmission system comprising plurality of nodes with different functionality" and "[t]herefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine *Elbers*' optical network nodes into the transmission ring system of *Koehler* as to increase flexibility and capacity of the network." Office Action, page 5. However, the mere fact that *Koehler* discloses a ring transmission system with two hubs and other nodes (see, e.g., *Koehler*, Abstract) does not provide the specific motivation in the art to combine the references as suggested. The Office Action fails to cite to any portion of any art as providing the motivation to make the proposed combination. Merely stating that such a combination is obvious "to increase flexibility and capacity of the network" does not satisfy the strict requirements of the Federal Circuit to support such a rejection. According to the Federal Circuit, "a showing of a suggestion, teaching, or motivation . . . is an 'essential component of an obviousness holding.'" *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 U.S.P.Q.2d 1456, 1459 (Fed. Cir. 2000) (quoting *C.R. Bard, Inc., v. M3 Systems, Inc.*, 157 F.3d 1340, 1352, 48 U.S.P.Q.2d 1225, 1232 (Fed. Cir. 1998)). Furthermore, while "evidence of a suggestion, teaching, or motivation . . . may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved, . . . [t]he range of sources available . . . does

not diminish the requirement for actual evidence." *In re Dembiczak*, 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). Thus, it is a factual question that cannot be resolved on subjective belief and unknown authority, but must be based on objective evidence of record. *See In re Lee*, 277 F.3d 1338, 1343-44, 61 U.S.P.Q.2d 1430, 1434 (Fed. Cir. 2002). Indeed, the factual inquiry whether to combine or modify references must be thorough and searching. *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 U.S.P.Q.2d 1001, 1008 (Fed. Cir. 2001).

Therefore, at least because the references fail to disclose each claim element as discussed above and because there is no properly cited motivation to combine the references, Applicants respectfully submit that Claims 1, 16 and 23 are patentable over the cited art used in the rejections and request that the rejections of these claims be withdrawn.

Claims 2-7 each depends from Claim 1, Claims 17-22 each depends from Claim 16 and Claims 24-28 each depends from Claim 23. Thus, for at least the reasons discussed above with respect to Claims 1, 16 and 23, Applicants respectfully request that the rejections of Claims 2-7, 17-22 and 24-28 be withdrawn.

Claims 8-11 and 29-31

Claim 8 recites a plurality of nodes each comprising at least one transport element operable to passively add and drop one or more traffic streams, the plurality of nodes comprising a combination node comprising a coupler node transport element operable to drop and continue optical traffic passing through the coupler node transport element and a hub node transport element cascaded with the coupler node transport element and operable to selectively pass or terminate a plurality of individual sub-bands of the optical traffic. Claim 29 recites similar elements. The Office Action suggests that *Elbers* discloses the claimed coupler node transport element at Figure 3, paragraph [0048] of *Elbers*. *See* Office Action, page 7. However, *Elbers* merely discloses central elements ZEn comprising circuits with a space switching stage with drop and continue capability. These central elements are thus not operable to passively add and drop one or more traffic streams.

In addition, while the Office Action states that *Elbers* does not disclose a hub node transport element cascaded with the coupler node transport element, the Office Action states

that this "is a matter of design choice, structure and functionality of the network" and that it would have been obvious to use a hub node transport element cascaded with the coupler node transport element. Office Action, pages 7-8. As an initial matter, making such a modification would not be obvious because it would render *Elbers* unsatisfactory for its intended purpose and would change its principle of operation. See M.P.E.P. § 2143.01. For example, modifying *Elbers* by moving central elements ZEn (which the Office Action contends are the claimed coupler node transport elements) such that they are cascaded with the BAUn modules (which the Office Action contends are the claimed hub node transport elements) would render *Elbers* unsatisfactory for its intended purpose and would change its principle of operation because it is the current location of ZEn, between the SDMUX and SMUX elements, that allows *Elbers* to operate in its intended manner. See, e.g., *Elbers*, paragraph [0049]. In addition, as discussed above with respect to the rejections of Claims 1, 16 and 23, there is no motivation to combine *Koehler* with *Elbers* in the manner suggested or to make the suggested modifications to *Elbers*. The Office Action fails to cite to any portion of any art as providing the motivation to make the proposed combination and modification.

Therefore, at least because the references fail to disclose each claim element as discussed above and because there is no motivation to combine or modify the references, Applicants respectfully submit that Claims 8 and 29 are patentable over the cited art used in the rejections and request that the rejections of these claims be withdrawn.

Claims 9-11 each depends from Claim 8, and Claims 30-31 each depends from Claim 29. Thus, for at least the reasons discussed above with respect to Claims 8 and 29, Applicants respectfully request that the rejections of Claims 9-11 and 30-31 be withdrawn.

Claims 12-15 and 32-34

Claim 12 recites a plurality of nodes each comprising at least one transport element operable to passively add and drop one or more traffic streams, the plurality of nodes comprising a combination node comprising a sub-band node transport element operable to terminate a respective sub-band of the optical traffic and a hub node transport element cascaded with the sub-band node transport element and operable to selectively pass or terminate a plurality of individual sub-bands of the optical traffic. Claim 32 recites similar elements. The Office Action premises the rejections of these claims on the same disclosures

used to reject Claims 1 and 8. *See, e.g.*, Office Action, pages 8-9. As discussed above, *Elbers* merely discloses a single node – a "modular optical network node" – and not an optical ring with a plurality of nodes. *See Elbers*, Abstract. The Office Action suggests that different components of the *Elbers* node constitute the claimed hub-band node and plurality of sub-band nodes. Applicants respectfully disagree. First, *Elbers* does not disclose a plurality of nodes operable to passively add and drop one or more traffic streams to and from the optical ring. The components identified in the Office Action do not each passively add and drop one or more traffic streams to and from the optical ring. Instead, they are all part of the same optical node coupled to a network. Second, the components of the *Elbers* node identified as the claimed "sub-band node transport element" (add/drop stages ADS_n, ADS_m) are not operable to terminate a respective sub-band of the optical traffic. All that is disclosed with respect to these component is that they are add/drop stages providing local add/drop functionality and that they may include "a combination of optical filters, preferably narrowband optical filters, couplers or circulators." *See Elbers*, par. [0040] and [0045]. The mere general disclosure that the *Elbers* add/drop stages may include optical filters does not provide the necessary disclosure of a plurality of sub-band nodes each operable to terminate a respective sub-band of the optical traffic.

In addition, while the Office Action states that *Elbers* does not disclose a hub node transport element cascaded with the sub-band node transport element, the Office Action states that this "is a matter of design choice, structure and functionality of the network" and that it would have been obvious to use a hub node transport element cascaded with the coupler node transport element. Office Action, page 9. As an initial matter, making such a modification would not be obvious because it would render *Elbers* unsatisfactory for its intended purpose and would change its principle of operation. *See* M.P.E.P. § 2143.01. For example, modifying *Elbers* in the suggested manner would render *Elbers* unsatisfactory for its intended purpose and would change its principle of operation because it is the current location of the *Elbers* add-drop stage that allows *Elbers* to operate in its intended manner. In addition, as discussed above with respect to the rejections of Claims 1, 16 and 23, there is no motivation to combine *Koehler* with *Elbers* in the manner suggested or to make the suggested modifications to *Elbers*. The Office Action fails to cite to any portion of any art as providing the motivation to make the proposed combination and modification.

Therefore, at least because the references fail to disclose each claim element as discussed above and because there is no motivation to combine or modify the references, Applicants respectfully submit that Claims 12 and 32 are patentable over the cited art used in the rejections and request that the rejections of these claims be withdrawn.

Claims 13-15 each depends from Claim 12, and Claims 33-34 each depends from Claim 32. Thus, for at least the reasons discussed above with respect to Claims 12 and 32, Applicants respectfully request that the rejections of Claims 13-15 and 33-34 be withdrawn.

Claims 37-40 and 43-46

The Office Action rejects Claims 37 and 43 under 35 U.S.C. § 103(a) as being unpatentable over *Tian*. The Office Action rejects Claims 38-40 and 44-46 under 35 U.S.C. 103(a) as being unpatentable over *Tian* in view of *Elbers*. Applicants respectfully traverse these rejections. As specified in 35 U.S.C. § 103(c), "subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the claimed invention was made, owned by the same person or subject to an obligation of assignment to the same person." At the time the invention was made, the subject matter of *Tian* and the claimed invention were both subject to an obligation of assignment to Fujitsu Limited. Thus, Applicants respectfully submit that *Tian* is not available as a prior art reference for use in Section 103 rejections. Applicants thus respectfully request allowance of Claims 37-40 and 43-46.

CONCLUSION

Applicants have made an earnest attempt to place this case in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicants respectfully request full allowance of all pending Claims.

If the Examiner feels that a telephone conference or an interview would advance prosecution of this Application in any manner, the undersigned attorney for Applicants stands ready to conduct such a conference at the convenience of the Examiner.

No fee is believed to be due. However, the Commissioner is hereby authorized to charge any fees due or credit any overpayments, to Deposit Account No. 02-0384 of Baker Botts, L.L.P.

Respectfully submitted,

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